



Research Article

ISSN 2320-4818

JSIR 2018; 7(1): 15-17

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Received: 28-04-2018

Accepted: 11-03-2018

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Relevance of *Shramahara mahakashaya* (An anti-fatigue formulation) in sports medicine

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Abstract

Sports medicine is an interdisciplinary subspecialty of medicine which deals with the overall care of an athlete at all levels. To gain the peak level of physical and mental activity numbers of sportsman are spoiling their carrier by consuming various kinds of prohibited performance enhancing drugs. Now days this is a burden issue of sports society. Hence the sports societies are looking for safe alternate natural source of medicine to combat this issue. On this scenery present review stands to analyse the applicability of *Shramahara mahakashaya* in the field of sports medicine. Literary resources were analyzed and discussion was made accordingly. Study presumed that *Shramahara mahakashaya* mentioned by Acharya Charaka in *Charaka samhita sutrasthan* 4th chapter, possess 10 drugs. Out of 10 drugs 7 drugs are fruits with high nutritive value and other active principles. All the drugs are reach source of carbohydrate, protein, fat, mineral and calorie. These all drugs are easily available. Combination of all these drugs can be incorporated as anti-fatigue agent in the field of sports medicine.

Keywords: *Shrama*, Fatigue, Ayurveda concept, *Charakasamhita*.

INTRODUCTION

Sports medicine is an interdisciplinary subspecialty of medicine which deals with the overall care of an athlete at all levels, both amateur and professional [1]. The sports medical team includes specialty physicians and surgeons, athletic trainers, physical therapists, coaches and other personnel [2]. The aim of sports medicine is to maintain, sustain and at times to regain peak physical fitness i.e. adaptability to physical and mental stress. The main objective of sports medicine is to prevent the damage to the human system caused mostly by inactivity i.e. lack of movement or hypokinesia due to sedentary habits and lack of physical exercise or the damage caused to the sportsmen because of excessive training and load in the competitive world [3]. Main functions of sports medicine are promotive, educative, formative, recreative, competitive, therapeutic and rehabilitative in nature. Sports medicine services may also be extended for prevention of obesity, cardiac illness, cardiac rehabilitation and diabetes [4]. For attaining the peak level of physical and mental stability many young talented sportsmen are spoiling their carrier by taking prohibited performance enhancing drugs. This is a burden issue now days in the field of sports medicine. Consequently the sports society is looking for alternate safe and natural source of medicine to conflict this issue. Here is the scope of novel approach of *Ayurveda* which can significantly contribute to fulfil the demand of sports society on this encumbrance concern. In *Charaka samhita acharya Charaka* has mentioned *Shramahara mahakashaya* having 10 drugs to alleviate *shrama*. Present review aimed to analyse the applicability of these drugs in the arena of sports medicine. All the related available literature was reviewed and discussion was made based on critical analysis.

CONCEPT OF SHRAMA

The word '*shrama*' denotes fatigue, weariness, tired, exhausted, exertion, effort either bodily or mentally. '*Hara*' means bearing, taking away, destroying, removing and seizer etc [5]. '*Shramahara*' can be defined as an action which destroys or take away of fatigue, produced by either physically or mentally. Synonyms of *shrama* mentioned in *Shabdakalpa druma*, are *Klama* (Condition exerted due to the slight exhaustion), *Klesha* (termed as discomfortness), *Parishrama* (loss of physical strength), *Prayaasa* (physical or mental effort), *Aayaasa* (exhausting activity), *Glaani* (lack of desire for physical work). *Acharya charaka* has considered *Glaani* as tiredness of *manas* (mind) and *Jnanendriya* (sense organ). *Indu* has opined *Glaani* is a condition of depletion of *Harsha* [6]. *Shrama* can be seen in *swastha*

(healthy) and *aatura avastha* (unhealthy). *Shrama* produced after *vyayaama* (exercise), because of suppression of *pipaasaa* (thirst), *nishwaasa vega* (expiration) are seen in healthy persons. *Shrama* caused by underlying pathology can be seen in diseased condition also. *Shrama* can be seen as a *nidaana* (etiology) of *Vaata kopana* (vitiating of *Vaata*), *Kustha* (dermatological disorder) and as *purvarupa* (prodermal symptoms) of *Jwara* (~rise of body temperature), *Pandu* (~anaemia) etc. It may also arise as *lakshana* (sign and indicator) in *Vatajajwara*, *Asthikshaya* (bone disorder) etc [7].

MODERN VIEW OF FATIGUE

According to modern science *shrama* (fatigue) is a subjective feeling of tiredness, can be alleviated by periods of rest. It is of 2 types viz. physical and mental. Physical fatigue is the transient inability of a muscle to maintain optimal physical performance and is made more severe by intense physical exercise. Mental fatigue is a transient decrease in maximal cognitive performance resulting from prolonged periods of cognitive activity. Prolonged fatigue is a self-reported, persistent (constant) fatigue lasting at least one month. Chronic fatigue is a self-reported fatigue lasting at least six consecutive months. Chronic fatigue may be either persistent or relapsing. Chronic fatigue is a symptom of many diseases and conditions similarly like as *Shrama* [8]. Several theories explain the mechanism of fatigue, such as- the

‘exhaustion theory’ suggests that during exercise, many energy sources, such as glucose and liver glycogen, will be exhausted which leads to physical fatigue. Several reports showed that post-exercise nutrition through the administration of proteins, peptides or amino acids can facilitate recovery from fatigue (Wang *et al.*, 2008). The ‘clogging theory’, interprets the over accumulation of serum lactic acid (LA) and blood urea nitrogen (BUN) will also result in metabolic disorders leading to fatigue. The ‘free radical theory’ suggests that intense exercise can produce an imbalance between the body’s oxidation system and its anti-oxidation system. The accumulation of reactive free radicals will put the body in a state of oxidative Stress and bring injury to the body by attacking large molecules and cell organs (Wang *et al.*, 2008) [9].

SHRAMAHARA MAHAKASHAYA

In *Charaka samhita sutra sthaan* 4thchapter, *Aacharya charaka* has mentioned *Shramahara mahakashaya* having 10 drugs to alleviate *shrama*. These are *Draksha* (grapes), *Kharjura* (date), *Priyala* (kaddappa almond), *Badara* (Indian plum), *Dadima* (pomegranate), *Phalgu* (common fig), *Parushaka* (falsa), *Ikshu* (sugarcane), *Yava* (barley) and *Shastika* (red rice). Out of 10 drugs 7 drugs are fruits with more nutritive value and other active principles [10].

Table 1: Drugs of *Shramahara mahakasaaya* with their botanical source and properties

S. No.	Drugs	Useful part	Rasa	Guna	Virya	Vipaka	Dosha karma
1	<i>Draksha Vitis vinifera</i> L.(Vitaceae)	Fruit	M	Gu,Sni	Sheeta	M	VP
2	<i>Kharjura Phoenix sylvestris</i> (L.) Roxb. (Arecaceae)	Fruit	M, Ks	Gu,Sni	Sheeta	M	VP
3	<i>Priyala Buchanania lanzan</i> Spreng. (Anacardiaceae)	Seed kernel	M	Gu,Sni	Sheeta	M	VP
4	<i>Badara Ziziphus zizyphus</i> (L.) H.Karst. (Rhamnaceae)	Fruit	A,M, Ks	Gu,Sni	Sheeta	M	VP
5	<i>Daadimba Punica granatum</i> L. (Lythraceae)	Fruit	M, Ks, A	La, Sni	Anushna	M	VPK
6	<i>Phalgu Ficus carica</i> L. (Moraceae)	Fruit	M	Gu,Sni	Sheeta	M	VP
7	<i>Parushaka Grewia asiatica</i> L. (Tiliaceae)	Fruit	M, A, Ks	La	Sheeta	M	VP
8	<i>Ikshu Saccharum officinarum</i> L.(Poaceae)	Stem	M	Gu,Sni	Sheeta	M	VP
9	<i>Yava Hordeum vulgare</i> L.(Poaceae)	Grain	Ks,M	Ru,La	Sheeta	M	KP
10	<i>Shastika shali Oryza sativa</i> L. (Poaceae)	Grain	M,Ks	Gu,Sni	Sheeta	M	P

DISCUSSION AND CONCLUSION

Shrama is a subjective feeling of tiredness. It may associate with loss of both physical and mental endurance capacity. It is a qualitative phenomenon which is attributing to a subject. It can’t be precisely measured by instrument, device or technique. Its may vary between the observer. *Sharama* may arise in both physiological and pathological condition. It may responsible for foundation of a diseases, it may arise as pre-indicator as well as indicator of various disease. As per modern researcher fatigue is a physiological phenomenon that appears with physical stress or exhaustive exercises, which reduces the physical endurance capacity [11, 12]. After analysing various concept and theory regarding *shrama* in different ancient text, it can be interpreted that concept of *shrama* mentioned by ancient scholar of *Ayurveda* can be explained through the theory of fatigue. Along with the pharmacological action mentioned under the term ‘*shramahara*’ can be interpreted as ‘anti-fatigue’ action [13]. Anti-fatigue pharmacological property is quite important in the field of sports medicine as the aim of sports medicine is to provide the peak level of physical and mental stability at time. For achieving this goal many sportsmen became addicted to the modern

synthetic performance enhancing agent. As a result certainly they are spoiling their carrier as most of these synthetic drugs are prohibited by WADA (world anti doping agencies). Hence on this occasion holistic and natural healing approach of *Ayurveda* can contribute significantly. The *shramahara mahakashaya* mentioned by implied father of *Ayurveda* medicine *acharya Charaka* possess 10 drugs. Out of 10 drugs 7 drugs are fruits with more nutritive value and other active principles [14].

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